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# BOOK OF ABSTRACTS

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## Radioactivity of fungi in schist-type soil in the Stara Planina mountain ecosystem

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Mountain ecosystems are going through changes due to numerous physical-chemical processes in the environment rather than the anthropogenic activities. Primordial radioactivity of rock and soil material migrates and fractionates in other environmental sections like waters, air and biota. Having a feature to accumulate different minerals and trace element present in soil and three substrates, fungi indicates their composition and related processes. The aim of this study is uptake of radionuclides by fungi in the schist soil of the Stara Planina, mountain famous for biodiversity as well as for enhanced natural radioactivity areas. Samples of various fungi species (stipes and cups) and their soil substrates have been collected in summer season 2019. Collected soil samples are pedologically characterized and analysed by gamma-spectrometry (HP Ge) after the secular radioactive equilibrium had been reached. Soil characterization has shown the share of coarse fragments, sand, silt and clay in the schist (shale) structure while pH value was 4.80-5.33 and organic carbon content 3.10%. The content of significant natural radionuclides <sup>40</sup>K, <sup>226</sup>Ra, <sup>232</sup>Th, <sup>238</sup>U and manmade <sup>137</sup>Cs was (in Bq/kg) was 500±30, 27±2, 26±2, 32±4, 1.6±0.2 respectively. Dried fungi samples were analysed by gamma spectrometry showing the natural radionuclide content in wide range of values. Obtained results indicate dependence of the radionuclides uptake from the substrate on their abundance in schist soil type as well as the fungus specie physiology. Slight difference was observed in results between content in species with different types of nutrient uptake (mycorrhizal and saprobic). The <sup>137</sup>Cs content varied from 2-20 Bq/kg. Further knowledge on the local population habits in use of edible fungi species would enable dose assessment for the representatives of the public and contribute to a further research on the Stara Planina mountain ecosystem.

